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January 18, 2019

**VIA HAND DELIVERY**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street, 2nd Floor North  
P.O. Box 3265  
Harrisburg, PA 17105-3265

R-2015-2518438  
C-2016-2527150  
C-2016-2528559  
C-2016-2529436  
C-2016-2529638  
C-2016-2534010  
C-2016-2534992

**Re: Pennsylvania Public Utility Commission v. UGI Utilities, Inc. - Gas Division  
Docket No. ~~R-2015-2518438~~**

**Office of Consumer Advocate, Office of Small Business Advocate, UGI Industrial  
Intervenors, Joseph Sandoski, Vicki L. East and Tom Harrison  
Docket Nos. ~~C-2016-2527150, C-2016-2528559, C-2016-2529436, C-2016-2529638, C-  
2016-2534010, C-2016-2534992~~**

Dear Secretary Chiavetta:

Enclosed for filing on behalf of UGI Utilities, Inc. – Gas Division’s South Rate District (“UGI South”) is the Annual Report for the period October 1, 2017, through September 30, 2018, Program Year 2 of UGI South’s Energy Efficiency and Conservation Plan. The Annual Report is being submitted to the Pennsylvania Public Utility Commission as required by Paragraph 41 of the Settlement approved in Company’s 2016 base rate proceeding.

Respectfully submitted,

Garrett P. Lent

GPL/jl  
Enclosures

cc: Certificate of Service  
Bureau of Technical Utility Services

ALLENTOWN HARRISBURG LANCASTER PHILADELPHIA PITTSBURGH PRINCETON WASHINGTON, D.C.

A PENNSYLVANIA PROFESSIONAL CORPORATION

**Report to the  
Pennsylvania Public Utility Commission**

**UGI Utilities, Inc. – Gas Division  
UGI South Rate District  
Energy Efficiency and Conservation Plan  
Program Year 2 (PY2)  
October 1, 2017 - September 30, 2018**

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**JAN 18 2019**

**PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU**

**Prepared by UGI Utilities, Inc. - Gas Division  
Filing Date: January 18, 2019**

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# 1 EXECUTIVE SUMMARY

This Annual Report covers the second year of the UGI Utilities, Inc. – Gas Division’s (UGI Gas) South Rate District’s (UGI South) Energy Efficiency and Conservation (EE&C) Plan, approved as part of UGI Utilities, Inc. – Gas Division’s 2016 Rate Case (Docket No. R-2015-2518438). Program Year 2 (PY2) covers the period of October 1, 2017, through September 30, 2018. The EE&C Plan continued the success of PY1 into and throughout PY2:

- UGI South launched two new energy efficiency (EE) programs in PY2: the Residential Retrofit (RR) Program and the New Construction (NC) Program. UGI South also fully launched the Nonresidential Retrofit (NR) Program, which was soft launched in PY1.
- UGI South hired Applied Energy Group (AEG) as the EE&C portfolio evaluator. Evaluation activity began in September 2018.
- Costs in PY2 for the EE&C Portfolio were \$4.8 million, which equaled 124% of projected costs. Of PY2 costs, UGI South spent \$3.67 million on incentives, (166% of projections) and \$1.13 million on non-incentive costs (58% of projections).
- PY2 savings for the EE programs were 112,358 MMBtus (206% of projections) while costs were \$4.8 million (124% of projections). The EE programs also resulted in electric savings of 1,707 MWh in PY2.
- There was no participation in the Combined Heat and Power (CHP) Program in PY2; however, two projects are pre-approved for PY3. UGI South spent \$4,510 on administration for the CHP Program in PY2.
- The total EE&C Portfolio provided \$8.67 million in net benefits to customers with a benefit-to-cost ratio (BCR) of 2.22 as calculated under the Total Resource Cost (TRC) Test, including Demand Reduction Induced Price Effect (DRIPE) and the market price for CO<sub>2</sub>. Under the TRC Test without DRIPE and CO<sub>2</sub>, the Portfolio provided \$5.78 million in net benefits to customers with a BCR of 1.81.

## **2 PORTFOLIO OVERVIEW**

### **2.1 Background**

In January 2016, UGI Gas proposed a voluntary, five-year EE&C Plan as part of its Rate Case (Docket No. R-2015-2518438). By its order entered October 14, 2016, the Commission approved the EE&C Plan (as amended by settlement in the proceeding). Pursuant to the order entered September 20, 2018 at Docket Nos. A-2018-3000381, *et al.*, on October 1, 2018, UGI Central Penn Gas, Inc. and UGI Penn Natural Gas, Inc. merged with UGI Utilities, Inc., with UGI Utilities, Inc. as the sole surviving entity. As of the effective date of the merger, the service territory of UGI Gas is known as the UGI South Rate District of UGI Utilities, Inc.

UGI South respectfully submits this report, documenting the results of its EE&C Plan for PY2 in compliance with the agreed-upon settlement provisions to provide an annual report. The results set forth below represent a portfolio of cost-effective EE&C programs that benefit the customer through decreased energy costs while maintaining cost-effectiveness under the TRC test.

UGI South has six natural gas EE programs in its EE&C Portfolio and one program focused on CHP. These programs are:

- Residential Prescriptive (RP) Program
- Nonresidential Prescriptive (NP) Program
- New Construction (NC) Program
- Residential Retrofit (RR) Program
- Nonresidential Retrofit (NR) Program
- Behavior and Education (BE) Program
- Combined Heat and Power (CHP) Program

These programs follow the designs and goals established in UGI Gas's 2016 rate case. All the EE&C programs are voluntary and offer UGI South customers a wide range of energy efficiency and conservation measures to decrease natural gas consumption and, in turn, customers' annual energy costs.

## 2.2 Summary of Activity

UGI South continued to build upon its strong start to PY1. Starting October 1, 2017, UGI South continued the same PY1 models for the RP Program, the NP Program, and the CHP Program. On January 1, 2018, UGI South launched the RR Program and NC Program, as well as fully launched the NR program. Portfolio spending of \$4.8 million was 124% of projected PY2 spending, but annual savings of 112,358 MMBtus were more than double PY2 projections. The high savings were mainly due to a strong PY2 for the RP Program. There were no CHP projects completed in PY2; however, there are a few active prospects in the pipeline that are considering CHP installations in 2019. The EE&C Portfolio had a present value TRC net benefits of \$8.67 million, with a BCR of 2.22 where the market price of CO<sub>2</sub> and DRIPE were counted. Where DRIPE and CO<sub>2</sub> were excluded from the calculation, the EE&C Portfolio had a present value TRC net benefit of \$5.78 million, with a BCR of 1.81. The following tables provide a high-level overview of the EE&C Portfolio's spending and savings for PY2 and the current phase.

<b>Program</b>	<b>Actual</b>	<b>Projected</b>	<b>%</b>
Portfolio Spending	\$4,806,145	\$4,215,879	114%
EE Programs	\$4,801,635	\$3,842,380	124%
CHP Program	\$4,510	\$373,500	1%
EE Program Natural Gas Savings			
Annual (MMBtus)	112,358	54,567	206%
Lifetime ((MMBtus)	2,104,266	1,005,124	209%
CHP Net Primary Energy Savings			
Annual (MMBtus)	0	169,855	0%
Lifetime ((MMBtus)	0	2,547,828	0%

<b>Program</b>	<b>Actual</b>	<b>Projected</b>	<b>%</b>
Portfolio Spending	\$6,796,112	\$27,000,000	25%
EE Programs	\$6,784,826	\$24,204,900	28%
CHP Program	\$11,286	\$2,795,100	0%
EE Program Natural Gas Savings			
Annual (MMBtus)	145,019	647,407	22%
Lifetime ((MMBtus)	2,732,181	7,384,990	37%
CHP Net Primary Energy Savings			
Annual (MMBtus)	0	1,706,090	0%
Lifetime ((MMBtus)	0	25,591,350	0%

**2.2.1 Summary of Program Costs**

<b>Table 3. PORTFOLIO COSTS BY PROGRAM – PY2</b>			
<b>Program</b>	<b>Total</b>	<b>Incentive</b>	<b>Non-Incentive</b>
Residential Prescriptive (RP)	\$3,286,333	\$3,085,800	\$200,533
Nonresidential Prescriptive (NP)	\$165,851	\$104,150	\$61,701
Residential Retrofit (RR)	\$393,609	\$73,512	\$320,097
Residential New Construction (RNC)	\$286,334	\$175,165	\$111,169
Nonresidential Retrofit (NR)	\$235,800	\$227,250	\$8,550
Nonresidential New Construction (NNC)	\$9,400	\$-	\$9,400
Behavior and Education (BE)	\$-	\$-	\$-
Portfolio wide Costs	\$424,309	\$-	\$424,309
<b>Energy Efficiency Total</b>	<b>\$4,801,636</b>	<b>\$3,665,877</b>	<b>\$1,135,759</b>
CHP	\$4,510	\$-	\$4,510
<b>Portfolio Total</b>	<b>\$4,806,146</b>	<b>\$3,665,877</b>	<b>\$1,140,269</b>

<b>Program</b>	<b>Total</b>	<b>Incentive</b>	<b>Non-Incentive</b>
Residential Prescriptive (RP)	\$4,734,481	\$4,256,900	\$477,581
Nonresidential Prescriptive (NP)	\$274,270	\$135,862	\$138,408
Residential Retrofit (RR)	\$413,423	\$73,512	\$339,911
Residential New Construction (RNC)	\$292,381	\$175,165	\$117,216
Nonresidential Retrofit (NR)	\$286,830	\$278,250	\$8,580
Nonresidential New Construction (NNC)	\$9,400	\$-	\$9,400
Behavior and Education (BE)	\$-	\$-	\$-
Portfolio wide Costs	\$774,042	\$-	\$774,042
<b>Energy Efficiency Total</b>	<b>\$6,784,826</b>	<b>\$4,919,689</b>	<b>\$1,865,137</b>
CHP	\$11,286	\$-	\$11,286
<b>Portfolio Total</b>	<b>\$6,796,112</b>	<b>\$4,919,689</b>	<b>\$1,876,423</b>

**2.2.2 Summary of Program Savings**

<b>Program</b>	<b>Natural Gas (MMBtus)</b>		<b>Electric Energy (MWh)</b>		<b>Capacity</b>	<b>Water Savings (Million Gal)</b>	
	<b>Annual</b>	<b>Lifetime</b>	<b>Annual</b>	<b>Lifetime</b>	<b>MW-yr.</b>	<b>Annual</b>	<b>Lifetime</b>
Residential Prescriptive (RP)	91,537	1,843,797	1,194.8	22,925.0	.256	0	0
Nonresidential Prescriptive (NP)	5,297	85,282	0.0	0.0	0.000	1,495,320	7,476,600
Residential Retrofit (RR)	751	20,942	12.3	327.8	.009	28,855	275,382
Residential New Construction (RNC)	7,590	174,579	492.6	11,330.3	0.002	0	0
Nonresidential Retrofit (NR)	7,183	146,655	7.1	99.0	.000	0	0
Nonresidential New Construction (NNC)	0	0	0.0	0.0	0.000	0	0
Behavior and Education (BE)	0	0	0.0	0.0	0.000	0	0
<b>Energy Efficiency Total</b>	<b>112,358</b>	<b>2,271,254</b>	<b>1,706.8</b>	<b>34,682</b>	<b>.267</b>	<b>1,524,175</b>	<b>7,751,982</b>



<b>Table 6. ENERGY EFFICIENCY PROGRAM SAVINGS – Inception to Date</b>							
<b>Program</b>	<b>Natural Gas (MMBtus)</b>		<b>Electric Energy (MWh)</b>		<b>Capacity</b>	<b>Water Savings (Million Gal)</b>	
	<b>Annual</b>	<b>Lifetime</b>	<b>Annual</b>	<b>Lifetime</b>	<b>MW-yr.</b>	<b>Annual</b>	<b>Lifetime</b>
Residential Prescriptive (RP)	118,409	2,356,667	1,701.8	32,761.4	0.367	0	0
Nonresidential Prescriptive (NP)	8,513	149,607	0.0	0.0	0.000	1,495,320	7,476,600
Residential Retrofit (RR)	751	20,942	12.3	327.8	0.009	28,855	275,382
Residential New Construction (RNC)	7,590	174,579	492.6	11,330.3	0.002	0	0
Nonresidential Retrofit (NR)	9,756	197,375	7.1	99.0	0.000	0	0
Nonresidential New Construction (NNC)	0	0	0.0	0.0	0.000	0	0
Behavior and Education (BE)	0	0	0.0	0.0	0.000	0	0
<b>Energy Efficiency Total</b>	<b>145,019</b>	<b>2,899,169</b>	<b>2,213.8</b>	<b>44,518.5</b>	<b>.378</b>	<b>1,524,175</b>	<b>7,751,982</b>

<b>Table 7. CHP PROGRAM SAVINGS</b>				
<b>Savings</b>	<b>PY2</b>		<b>Inception to Date</b>	
	<b>Annual</b>	<b>Lifetime</b>	<b>Annual</b>	<b>Lifetime</b>
Net Primary Fuel Savings (MMBtus)	0	0	0	0

2.2.3 Summary of Program Cost-Effectiveness

<b>Program</b>	<b>TRC Test - Base Case + DRIPE &amp; CO2</b>				<b>TRC Test - Base Case</b>			
	<b>NPV Benefits</b>	<b>NPV Costs</b>	<b>NPV Net</b>	<b>BCR</b>	<b>NPV Benefits</b>	<b>NPV Costs</b>	<b>NPV Net</b>	<b>BCR</b>
Residential Prescriptive (RP)	\$13,691,952	\$5,299,450	\$8,392,502	2.58	\$11,260,544	\$5,299,450	\$5,961,094	2.12
Nonresidential Prescriptive (NP)	\$511,159	\$162,752	\$348,407	3.14	\$419,076	\$162,752	\$256,324	2.57
Residential Retrofit (RR)	\$171,079	\$389,799	\$(218,720)	0.44	\$140,210	\$389,799	\$(249,589)	0.36
Residential New Construction (RNC)	\$671,290	\$374,141	\$297,150	1.79	\$476,610	\$374,141	\$102,469	1.27
Nonresidential Retrofit (NR)	\$723,900	\$524,860	\$199,040	1.38	\$585,690	\$524,860	\$60,830	1.12
Nonresidential New Construction (NNC)	\$-	\$7,462	\$(7,462)	0.00	\$-	\$7,462	\$(7,462)	0.00
Behavior and Education (BE)	\$-	\$-	\$-	N/A	\$-	\$-	\$-	N/A
Portfolio wide Costs	\$-	\$336,830	\$(336,830)	0.00	\$-	\$336,830	\$(336,830)	0.00
<b>Energy Efficiency Total</b>	<b>\$15,769,381</b>	<b>\$7,095,294</b>	<b>\$8,674,087</b>	<b>2.22</b>	<b>\$12,882,129</b>	<b>\$7,095,294</b>	<b>\$5,786,836</b>	<b>1.82</b>
CHP	\$-	\$3,580	\$(3,580)	0.00	\$-	\$3,580	\$(3,580)	0.00
<b>Portfolio Total</b>	<b>\$15,769,381</b>	<b>\$7,098,874</b>	<b>\$8,670,507</b>	<b>2.22</b>	<b>\$12,882,129</b>	<b>\$7,098,874</b>	<b>\$5,783,255</b>	<b>1.81</b>

**Table 9. PORTFOLIO COST-EFFECTIVENESS BY PROGRAM – Inception to Date (2015\$)**

Program	TRC Test - Base Case + DRIPE & CO2				TRC Test - Base Case			
	NPV Benefits	NPV Costs	NPV Net	BCR	NPV Benefits	NPV Costs	NPV Net	BCR
Residential Prescriptive (RP)	\$17,859,541	\$7,556,780	\$10,302,760	2.36	\$14,685,270	\$7,556,780	\$7,128,489	1.94
Nonresidential Prescriptive (NP)	\$955,092	\$268,808	\$686,284	3.55	\$794,402	\$268,808	\$525,594	2.96
Residential Retrofit (RR)	\$171,079	\$406,974	\$(235,895)	0.42	\$140,210	\$406,974	\$(266,764)	0.34
Residential New Construction (RNC)	\$671,290	\$379,382	\$291,909	1.77	\$476,610	\$379,382	\$97,228	1.26
Nonresidential Retrofit (NR)	\$981,783	\$633,080	\$348,704	1.55	\$789,478	\$633,080	\$156,398	1.25
Nonresidential New Construction (NNC)	\$-	\$7,462	\$(7,462)	0.00	\$-	\$7,462	\$(7,462)	0.00
Behavior and Education (BE)	\$-	\$-	\$-	N/A	\$-	\$-	\$-	N/A
Portfolio wide Costs	\$-	\$639,972	\$(639,972)	0.00	\$-	\$639,972	\$(639,972)	0.00
<b>Energy Efficiency Total</b>	<b>\$20,638,787</b>	<b>\$9,892,458</b>	<b>\$10,746,328</b>	<b>2.09</b>	<b>\$16,885,969</b>	<b>\$9,892,458</b>	<b>\$6,993,511</b>	<b>1.71</b>
CHP	\$-	\$9,980	\$(9,980)	0.00	\$-	\$9,980	\$(9,980)	0.00
<b>Portfolio Total</b>	<b>\$20,638,787</b>	<b>\$9,902,438</b>	<b>\$10,736,348</b>	<b>2.08</b>	<b>\$16,885,969</b>	<b>\$9,902,438</b>	<b>\$6,983,531</b>	<b>1.71</b>

## 2.3 Progress Toward Goals

UGI South made significant progress toward savings goals, achieving 206% of its PY2 annual MMBtu projections. Administration costs came in below projections, partially due to the amortization of portfolio startup costs over the five-year life of the Plan. The strong start in PY2 can be primarily attributed to the success of the RP Program, for which customer incentives were 213% higher than initially projected. Overall, UGI South has spent \$6,796,612 since inception, or approximately 25% of the approved settlement cap of \$27 million.

UGI South also has kept the commitments it made in the settlement of its 2016 Base Rate Case. Paragraph 42 of the settlement for UGI Gas's 2016 Rate Case requires the Company to limit the percentage of costs spent by the utility on the NP, NR, and Nonresidential New Construction Programs to 55% or less of the total cost to the utility and customer over the five-year life of the plan. The following table shows that for the phase-to-date, this value is 51%. With increased participation in PY2, this figure fell from 65% after PY1 and is now within the compliance target.

<b>Program</b>	<b>Utility Cost</b>	<b>Incremental Participant Cost</b>	<b>Total Cost</b>	<b>% Utility</b>
NP	\$274,270	\$53,106	\$327,376	84%
NR	\$286,830	\$499,194	\$786,024	36%
NNC	\$9,400	\$0	\$9,400	100%
<b>Total</b>	<b>\$570,500</b>	<b>\$552,300</b>	<b>\$1,122,800</b>	<b>51%</b>

In addition, per Paragraph 39 of the settlement for UGI Gas's 2016 Base Rate Case, the Company agreed to: (1) develop targeted marketing materials for existing residential multi-family customers and new multi-family residential construction, including master-metered multi-family residences; (2) coordinate with the Pennsylvania Housing Alliance and the Pennsylvania Housing Finance Authority (PHFA); and (3) track participation for buildings with more than one unit. In compliance with the settlement, in PY2, UGI South identified 155 rebates in the RP and NP program that were tied to buildings with more than one unit. This represented \$117,100 incentive dollars and 2,147 MMBtus in first year savings. PY2 activity, specifically targeted at the multifamily market, involved engagement with stakeholders to educate on the benefits of the NR and NC Programs. UGI South developed specific marketing collateral for multi-family developers that highlighted eligible, smaller sized equipment that would be more applicable for buildings containing more than one unit. UGI South also developed individual email marketing campaigns to focus on multi-family stakeholders.

The e-blasts were sent in June 2018 and September 2018. One e-blast copy was sent to builders and developers and focused on programs of interest for that audience. Another e-blast copy was sent to customers living in multi-family buildings and focused on programs of interest for that audience. UGI South EE&C Staff continued to coordinate with the Housing Alliance of PA in PY2. UGI South facilitated conference calls with the Housing Alliance on October 31, 2017 and September 4, 2018. These calls were attended by representatives of the Housing Alliance, The PA Utility Law Project (PULP), and a representative from the Natural Resources Defense Council (NRDC). In addition to these calls, UGI South also facilitated a webinar for the Housing Alliance members. In PY2, the webinar was held on December 17, 2017.

Moreover, paragraph 40 of the settlement for UGI Gas’s 2016 Base Rate Case requires the Company to: (1) inform customers who contact UGI South or its CSPs with interest in participating in the EE&C Plan that they might qualify for the Company’s Low Income Usage Reduction Program (LIURP), if they are income qualified; (2) refer such customers to LIURP; and (3) refer confirmed low-income customers to LIURP. In PY2, UGI South referred 8 customers to the Company’s LIURP Team.

### 2.3.1 Portfolio Costs

<b>Component (Nominal \$)</b>	<b>Actual</b>	<b>Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$4,806,146</b>	<b>\$4,215,879</b>	<b>114%</b>
Customer Incentives	\$3,665,877	\$2,203,437	166%
Administration	\$933,184	\$1,500,849	62%
Marketing	\$128,351	\$369,150	35%
Inspections	\$40,567	\$84,562	48%
Evaluations	\$38,167	\$57,881	66%
<b>Incremental Participant Costs</b>	<b>\$4,136,392</b>	<b>\$7,928,784</b>	<b>52%</b>

<b>Component (Nominal \$)</b>	<b>Actual</b>	<b>Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$6,796,142</b>	<b>\$27,000,000</b>	<b>25%</b>
Customer Incentives	\$4,919,689	\$16,909,824	29%
Administration	\$1,402,059	\$6,790,090	21%
Marketing	\$388,041	\$2,039,329	19%
Inspections	\$48,187	\$600,476	8%
Evaluations	\$38,167	\$660,281	6%
<b>Incremental Participant Costs</b>	<b>\$5,380,264</b>	<b>\$86,610,523</b>	<b>6%</b>

### 2.3.2 Portfolio Savings

<b>Table 13. EE&amp;C PROGRAM SAVINGS – PY2</b>			
<b>Type</b>	<b>Actual</b>	<b>Projected</b>	<b>%</b>
<b>EE Programs</b>			
<b>Natural Gas (MMBtus)</b>			
Annual	112,358	54,567	206%
Lifetime	2,104,266	1,005,124	209%
<b>Electric Energy (MWh)</b>			
Annual	1,706.8	254.6	670%
Lifetime	23,899.6	4,950.8	483%
Capacity Savings (MW)	0.4819	0.1719	280%
<b>Water Savings (Million Gal)</b>			
Annual	1,607,857	2,844,816	57%
Lifetime	7,751,982	24,553,351	32%
<b>CHP Program</b>			
<b>Net Primary Energy Savings</b>			
Annual (MMBtus)	0	169,855	0%
Lifetime (MMBtus)	0	2,547,828	0%

<b>Table 14. EE&amp;C PROGRAM SAVINGS - PHASE I</b>			
<b>Type</b>	<b>Actual</b>	<b>Projected</b>	<b>%</b>
<b>EE Programs</b>			
<b>Natural Gas (MMBtus)</b>			
Annual	145,019	647,407	22%
Lifetime	2,732,181	7,384,990	37%
<b>Electric Energy (MWh)</b>			
Annual	2,213.8	4,722.6	47%
Lifetime	33,736.0	92,459.8	36%
Capacity Savings (MW)	0.593	1.052	56%
<b>Water Savings (Million Gal)</b>			
Annual	1,607,857	26,189,579	6%
Lifetime	7,751,982	248,471,774	3%
<b>CHP Program</b>			
<b>Net Primary Energy Savings</b>			
Annual (MMBtus)	0	1,706,090	0%
Lifetime (MMBtus)	0	25,591,350	0%

## **3 PROGRAM RESULTS**

### **3.1 Residential Prescriptive Program**

(Rate Classes R/RT, N/NT)

#### **3.1.1 Program Description**

The Residential Prescriptive (RP) Program is designed to overcome market barriers to energy efficient space and water heating equipment in the residential sector through rebates and customer awareness. The objective of the program is to avoid lost opportunities by encouraging consumers to install the most efficient gas heating technologies available when replacing older, less efficient equipment. The program also aims to strengthen UGI South's relationship with heating, ventilation and air conditioning (HVAC) contractors, suppliers, and other trade allies.

#### **3.1.2 Program Highlights**

The RP Program spent \$3,286,333 in PY2, of which \$3,085,800 were customer incentives. The program provided first year gas savings of 91,537 MMBtus, 247% of plan projections. The program provided lifetime gas savings of 1,843,797 MMBtus, 267% of plan projections. Under the TRC Test, including DRIPE and CO<sub>2</sub>, the RP Program provided \$8.4 million in present value of net benefits (2015\$) with a BCR of 2.58. Without DRIPE or CO<sub>2</sub>, the RP Program provided \$5.9 million in present value of net benefits (2015\$) with a BCR of 2.12.

UGI South continued the same RP Program from PY1 in PY2 with only one small change. This change reflected a new ENERGY STAR Certification standard for Wi-Fi Thermostats. In PY1, any Wi-Fi connected thermostat was eligible for the \$100 rebate. Beginning in January 1, 2018, qualifying Wi-Fi thermostats were required to be ENERGY STAR Certified. This requirement improved cost effectiveness of the measure and increased customer savings as well as complied with the plan filing that specifies using ENERGY STAR or greater as a standard where applicable.

The RP Program saw participation remain higher than the plan filing forecast for PY2. The steady customer participation went hand in hand with contractor participation as program buy-in continued to show growth, and the Program exceeded its second-year participation and savings targets by a significant margin. In total, 6,531 customers participated in the RP Program in PY2 with 1,201 customers receiving multiple rebates. For example, customers installing heating equipment may have also chosen to install a Wi-Fi thermostat. Below is a chart that highlights rebates issued by equipment type.

<b>Table 15. RP Participation</b>	
<b>Equipment</b>	<b>Rebates Issued</b>
Wi-Fi Thermostat	4,684
ENERGY STAR Furnace	2,437
94+ AFUE Combi-Boiler	499
ENERGY STAR Tankless Water Heater	348
94+ AFUE Boiler	241
<b>Total</b>	<b>8,209</b>

### 3.1.2.1 Marketing Activity

Due to the success of the RP Program in PY1, much of the same marketing strategy was continued into PY2. The strategy continued to include outreach to HVAC contractors, customer bill inserts, digital advertising on multiple social media platforms, customer email marketing, an extremely successful Black Friday promotion and internet marketing on the UGI website.

HVAC contractor outreach remained a key piece of the RP Program marketing strategy. In PY2, 45% of participating customers reported hearing about the program from their contractor. In November 2017, informational sessions were held in Harrisburg, Lancaster, Bethlehem, and Reading and were attended by approximately 75 different HVAC companies.

Program marketing also included monthly bill inserts that highlighted the benefits of the program and the rebates available. The announcements were focused on educating customers on the various energy efficiency options available, along with energy saving tips.

During the start of the 2017 Holiday season, a limited time promotion was implemented to encourage the purchase of an Energy Star® Wi-Fi thermostat, via the UGI Marketplace. During this five-day promotion, which ran the Friday after Thanksgiving, through the following Tuesday, approximately 850 thermostats were purchased. During the purchase, customers were given an instant rebate at the point of sale, making it an easy and convenient process. Most of the marketing focus for the RP Program was spent on digital advertising. The UGI website, [www.ugi.com/savesmart](http://www.ugi.com/savesmart), was redesigned and optimized to better inform customers of the available rebates and benefits of the Program. Additional digital advertising included various social media channels and google key word searches. The Company's social media team regularly promoted the RP Program while leveraging platforms such as Facebook, Instagram, Twitter and Pinterest.

### 3.1.2.2 Inspection Activity

Energy Federation, Inc. (EFI), the CSP responsible for processing rebates, has also been retained to provide inspections on a subset of applications. The purpose of these inspections is to confirm that the equipment on the rebate application matches the equipment that has been installed in the



customer's home. Payment of the rebate is withheld from applications flagged for inspection until such activity has been completed. In PY2, 551 inspections were performed, with only eight inspections failing. Of the eight failed inspections, five were for eligible equipment for which the model numbers did not match application information. These model numbers were updated, and the rebates were issued to customers.

**3.1.2.3 Evaluation Activity**

On January 31, 2018, UGI Gas issued an RFP for a portfolio evaluator. After a thorough evaluation and interview process, Applied Energy Group (AEG) was hired as the UGI Gas EE&C portfolio evaluator. Work was done throughout the year to design the evaluation plan and finalize the five-year evaluation activity. AEG will conduct impact, process, and potential evaluations for all UGI Gas programs.

**3.1.3 Program Updates**

There are no program updates for PY3.

**3.1.4 Residential Prescriptive Program Results**

<b>Table 16. PROGRAM COSTS</b>			
<b>Component (Nominal \$)</b>	<b>PY2 - Actual</b>	<b>PY2 - Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$3,286,333</b>	<b>\$1,639,315</b>	<b>200%</b>
Customer Incentives	\$3,085,800	\$1,447,068	213%
Administration	\$105,582	\$69,133	153%
Marketing	\$53,029	\$63,451	84%
Inspections	\$20,930	\$50,193	42%
Evaluations	\$20,992	\$9,470	222%
<b>Incremental Participant Costs</b>	<b>\$3,389,448</b>	<b>\$1,644,929</b>	<b>206%</b>

**Table 17. PROGRAM SAVINGS**

Type	PY2 - Actual	PY2 - Projected	%
Natural Gas (MMBtus)			
Annual	91,537	37,009	247%
Lifetime	1,843,797	691,542	267%
Electric Energy (MWh)			
Annual	1,194.8	754.0	158%
Lifetime	22,925.0	14,635.8	157%
Capacity Savings (MW)	.256	.166	154%
Water Savings (Million Gal)			
Annual	0	0	0%
Lifetime	0	0	0%

**Table 18. PROGRAM COST-EFFECTIVENESS (BASE CASE + DRIPE & CO<sub>2</sub>)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$13,691,952	\$17,859,541
TRC NPV Costs	\$5,299,450	\$7,556,780
TRC Net Benefits	\$8,392,502	\$10,302,760
TRC Benefit/Cost Ratio	2.58	2.36

**Table 19. PROGRAM COST-EFFECTIVENESS (BASE CASE)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$11,260,544	\$14,685,270
TRC NPV Costs	\$5,299,450	\$7,556,780
TRC Net Benefits	\$5,961,094	\$7,128,489
TRC Benefit/Cost Ratio	2.12	1.94

## 3.2 Nonresidential Prescriptive Program

(Rate Classes R/RT, N/NT)

### 3.2.1 Program Description

The Nonresidential Prescriptive (NP) Program is designed to overcome market barriers to energy efficient equipment in the small business and commercial sector through rebates and customer outreach. The objective of the program is to encourage business owners to install the most efficient gas heating technologies available to replace older, less efficient equipment. The program also aims to strengthen UGI South's relationships with HVAC contractors, suppliers, and other trade allies.

### 3.2.2 Program Highlights

The NP Program spent \$165,851 in PY2, of which \$104,150 were customer incentives. The program provided first year gas savings of 5,297 MMBtus, 53% of plan projections and lifetime gas savings of 85,282 MMBtus, 51% of plan projections. Under the TRC Test, including DRIPE and CO<sub>2</sub>, the NP Program provided \$511 thousand in present value of net benefits (2015\$) with a BCR of 3.14. Without factoring in DRIPE or CO<sub>2</sub>, the NP Program provided \$419 thousand in present value of net benefits (2015\$) with a BCR of 2.57.

UGI South continued the same NP Program from PY1 in PY2 with only one small change. On January 1, 2018, the rebate for Commercial Boilers at 85% efficiency was eliminated and the rebate for Commercial Boilers at 90% efficiency was changed to require ENERGY STAR Certification. This change was made to remain consistent with the filing language of utilizing ENERGY STAR standards, or greater, when applicable.

The program continued to experience slow growth throughout PY2. Due to this challenge, UGI South enrolled a kitchen supply house to participate in a midstream program which enabled customers purchasing qualified commercial kitchen equipment to receive the rebate at the point of sale. In turn, the supply house was reimbursed for rebates issued on a monthly basis.

<b>Equipment</b>	<b>Rebates Issued</b>
Steam Trap < 15 PSIG	97
Commercial Fryer (Small)	30
Steam Trap 15 – 74 PSIG	15
Commercial Fryer (Large)	13
90+ Et Commercial Boiler	7
ENERGY STAR Commercial Water Heater	5
Pre-Rinse Spray Valve	2
<b>Total</b>	<b>169</b>

### 3.2.2.1 Marketing Activity

Marketing activity for the NP Program was conducted in conjunction with the marketing activity for the RP Program, including contractor outreach, bill inserts, digital and radio advertising.

UGI South also continued its membership with the Pennsylvania Restaurant and Lodging Association to continue the Company's outreach to that customer base. In addition, UGI South continued its outreach to Multi-Family developers and customers as referenced in section 2.3.

### 3.2.2.2 Inspection Activity

EFI, the CSP responsible for processing rebates, has also been retained to provide inspections on a subset of applications. The purpose of these inspections is to confirm that the equipment on the rebate application matches the equipment that has been installed in the customer's business. Payment of the rebate is withheld from applications flagged for inspection until such activity has been completed. In PY2, 15 inspections were performed on NP Program rebates, with no inspections failing.

### 3.2.2.3 Evaluation Activity

On January 31, 2018, UGI Gas issued an RFP for a portfolio evaluator. After a thorough evaluation and interview process, Applied Energy Group (AEG) was hired as the UGI Gas EE&C portfolio evaluator. Work was done throughout the year to design the evaluation plan and finalize the five-year evaluation activity. AEG will conduct impact, process, and potential evaluations for all UGI Gas programs. Evaluation activity officially began in September 2018. This initial activity was for the process evaluation and included UGI staff interviews and UGI customer survey phone interviews.

### 3.2.3 Program Updates

Upon partnering directly with a midstream commercial kitchen distributor, incentive levels for commercial fryers were reexamined. Effective April 1, 2018, the rebate for Commercial Fryers was reduced to \$500 per fryer.

### 3.2.4 Nonresidential Prescriptive Program Results

<b>Component (Nominal \$)</b>	<b>PY2 - Actual</b>	<b>PY2 - Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$165,851</b>	<b>\$313,469</b>	<b>53%</b>
Customer Incentives	\$104,150	\$213,083	49%
Administration	\$10,199	\$47,352	22%
Marketing	\$33,637	\$29,358	115%
Inspections	\$690	\$14,206	5%
Evaluations	\$17,175	\$9,470	181%
<b>Incremental Participant Costs</b>	<b>\$39,170</b>	<b>\$323,445</b>	<b>12%</b>

**Table 22. PROGRAM SAVINGS**

Type	PY2 - Actual	PY2 - Projected	%
Natural Gas (MMBtus)			
Annual	5,297	10,017	53%
Lifetime	85,282	166,851	51%
Electric Energy (MWh)			
Annual	0.0	0.0	
Lifetime	0.0	0.0	
Capacity Savings (MW)	0.000	0.000	
Water Savings (Million Gal)			
Annual	1,495,320	2,231,055	67%
Lifetime	7,476,600	13,386,330	56%

**Table 23. PROGRAM COST-EFFECTIVENESS (BASE CASE + DRIPE & CO<sub>2</sub>)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$511,159	\$955,092
TRC NPV Costs	\$162,752	\$268,808
TRC Net Benefits	\$348,407	\$686,284
TRC Benefit/Cost Ratio	3.14	3.55

**Table 24. PROGRAM COST-EFFECTIVENESS (BASE CASE)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$419,076	\$794,402
TRC NPV Costs	\$162,752	\$268,808
TRC Net Benefits	\$256,324	\$525,594
TRC Benefit/Cost Ratio	2.57	2.96

### 3.3 Residential New Construction Program

(Rate Classes R/RT)

#### 3.3.1 Program Description

The Residential New Construction (RNC) Program is designed to overcome market barriers to energy efficient space and water heating equipment, as well as high efficiency thermal envelopes, in both the residential new construction sector. This is accomplished through rebates offered to builders and developers. The objective of the program is to avoid lost opportunities by encouraging builders and developers to install the most efficient gas heating technologies available instead of less efficient baseline equipment, as well as promote thermal envelope best practices. The program also aims to strengthen UGI South's relationship with builders, HVAC contractors, suppliers, and other trade allies. The RNC Program was launched on January 1, 2018.

For the residential new construction track, the program requires builders to work with a Home Energy Rating System (HERS) rater on their home. An incentive of \$20 per annual MMBtu saved is paid to a new home, heated with natural gas, that achieves savings of 30% over code or greater. A \$30 per annual MMBtu incentive will be paid to homes that achieve savings of 30% over code and achieve ENERGY STAR Certification. The increase in incentive is designed to move the market towards more homes being ENERGY STAR Certified and leverage the HERS rating approach taken by the electric distribution companies (EDCs) under their Act 129 new construction programs.

#### 3.3.2 Program Highlights

The RNC Program spent \$286,334 in PY2, of which \$175,165 were customer incentives. The program provided first year gas savings of 7,590 MMBtus, 1077% of plan projections. Under the TRC Test, including DRIPE and CO<sub>2</sub>, the RP Program provided \$297 thousand in present value of net benefits (2015\$) with a BCR of 1.79. Without DRIPE or CO<sub>2</sub>, the RP Program provided \$102,469 in present value of net benefits (2015\$) with a BCR of 1.27.

UGI hired Performance Systems Development (PSD) as the program implementer for the Residential New Construction (RNC) and Residential Retrofit (RR) Programs. Below is a chart of participation by rebate type in the RNC program:

<b>Table 25. PROGRAM PARTICIPATION</b>	
<b>Rebate Level</b>	<b>Rebate Count</b>
30% Above Code	117
30% Above Code + ENERGY STAR	45
<b>Total</b>	<b>162</b>

### 3.3.2.1 Marketing Activity

In 2018, marketing was conducted through established builders and HERS raters who have been participants in the programs mandated for large EDCs by Act 129 of 2008, P.L. 1592 (Act 129). UGI South also included outreach to various Home Builder Associations to educate this audience on the availability of this program. Representatives from Performance Systems Development (PSD) also attended the Lehigh Valley Home Show, Berks Parade of Homes, Lancaster Parade of Homes, York Parade of Homes, and the Harrisburg Parade of Homes. These events are designed to spotlight participating homes as well as network with builders and raters to increase program participation. The marketing plan also included energy efficiency signage for homes that have been incentivized through the program. Lastly, a newsletter is created each month and sent to all participating builders, raters, and non-participating builders and raters that have been identified as active in the UGI South service territory. This newsletter highlights any pertinent changes or updates in the building industry as well as a spotlight home for each month.

### 3.3.2.2 Inspection Activity

During PY2, a total of 39 field inspections were conducted on new construction homes. A total of 18 of those inspections resulted in corrective action on the rating being necessary. All the homes inspected remained qualified for the program, as the corrective actions necessary were reconciliations between the pre-construction rating and the post-construction condition.

### 3.3.2.3 Evaluation Activity

There was no evaluation activity in PY2.

### 3.3.3 Program Updates

There are no program updates for PY3.

### 3.3.4 Residential New Construction Program Results

<b>Component (Nominal \$)</b>	<b>PY2 - Actual</b>	<b>PY2 - Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$286,334</b>	<b>\$258,540</b>	<b>114%</b>
Customer Incentives	\$175,165	\$100,385	174%
Administration	\$85,293	\$97,545	96%
Marketing	\$11,116	\$52,087	23%
Inspections	\$14,760	\$8,523	173%
Evaluations	\$0	\$0	0%
<b>Incremental Participant Costs</b>	<b>\$184,976</b>	<b>\$27,136</b>	<b>682%</b>

**Table 27. PROGRAM SAVINGS**

Type	PY2 - Actual	PY2 - Projected	%
Natural Gas (MMBtus)			
Annual	7,590	705	1077%
Lifetime	174,579	16,191	1078%
Electric Energy (MWh)			
Annual	492.6	11.9	4126%
Lifetime	492.6	274.6	179%
Capacity Savings (MW)	0.214	0.002	10700%
Water Savings (Million Gal)			
Annual	0	0	0%
Lifetime	0	0	0%

**Table 28. PROGRAM COST-EFFECTIVENESS (BASE CASE + DRIPE & CO<sub>2</sub>)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$671,290	\$671,290
TRC NPV Costs	\$374,141	\$379,382
TRC Net Benefits	\$297,150	\$291,909
TRC Benefit/Cost Ratio	1.79	1.77

**Table 29. PROGRAM COST-EFFECTIVENESS (BASE CASE)**

Benefits/Cost Component (2015\$)	PY1	Inception to Date
TRC NPV Benefits	\$476,610	\$476,610
TRC NPV Costs	\$374,141	\$379,382
TRC Net Benefits	\$102,469	\$97,228
TRC Benefit/Cost Ratio	1.27	1.26



### **3.4 Nonresidential New Construction**

(Rate Class N/NT)

#### **3.4.1 Program Description**

The Nonresidential New Construction (NNC) Program is designed to overcome market barriers to energy efficient space and water heating equipment, as well as high efficiency thermal envelopes, in the nonresidential new construction sector. This is accomplished through rebates offered to builders and developers. The objective of the program is to avoid lost opportunities by encouraging builders and developers to install the most efficient gas heating technologies available instead of less efficient baseline equipment, as well as promote thermal envelope best practices. The program also aims to strengthen UGI South's relationship with builders, HVAC contractors, suppliers, and other trade allies. Due to limited activity, the NNC Program is managed internally by UGI South EE&C Staff.

#### **3.4.2 Program Highlights**

In PY2, \$9,400 was spent on administrative activities for this program. There were no NNC projects completed in PY2.

##### *3.4.2.1 Marketing Activity*

In order to continue coordination with the Housing Alliance of Pennsylvania, UGI sponsored the 2017 Homes Within Reach Conference. The conference was held from December 4-6 in Harrisburg and was attended by hundreds of Multi-Family developers and stakeholders from throughout the UGI South service territory. As part of the sponsorship, the Company had a booth at the event to further inform customers about the Nonresidential New Construction Program.

##### *3.4.2.2 Inspection Activity*

There was no inspection activity in PY2.

##### *3.4.2.3 Evaluation Activity*

There was no evaluation activity in PY2.

#### **3.4.3 Program Updates**

There are no program updates for PY3.

### 3.4.4 Nonresidential New Construction Program Results

<b>Component (Nominal \$)</b>	<b>PY2 - Actual</b>	<b>PY2 - Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$9,400</b>	<b>154,880</b>	<b>6%</b>
Customer Incentives	\$0	\$60,136	0%
Administration	\$8,550	\$58,435	15%
Marketing	\$850	\$31,203	3%
Inspections	\$0	\$5,106	0%
Evaluations	\$0	\$0	0%
<b>Incremental Participant Costs</b>	<b>\$0</b>	<b>\$6,784</b>	<b>0%</b>

<b>Type</b>	<b>PY2 - Actual</b>	<b>PY2 - Projected</b>	<b>%</b>
<b>Natural Gas (MMBtus)</b>			
Annual	0	2,033	0%
Lifetime	0	36,601	0%
<b>Electric Energy (MWh)</b>			
Annual	0.0	0.1	0%
Lifetime	0.0	1.2	0%
<b>Capacity Savings (MW)</b>	<b>0.000</b>	<b>0.000</b>	<b>0%</b>
<b>Water Savings (Million Gal)</b>			
Annual	0	0	0%
Lifetime	0	0	0%

<b>Table 32. PROGRAM COST-EFFECTIVENESS (BASE CASE + DRIPE &amp; CO<sub>2</sub>)</b>		
<b>Benefits/Cost Component (2015\$)</b>	<b>PY2</b>	<b>Inception to Date</b>
TRC NPV Benefits	\$0	\$0
TRC NPV Costs	\$7,462	\$7,462
TRC Net Benefits	\$(7,462)	\$(7,462)
TRC Benefit/Cost Ratio	0.00	0.00

<b>Table 33. PROGRAM COST-EFFECTIVENESS (BASE CASE)</b>		
<b>Benefits/Cost Component (2015\$)</b>	<b>PY2</b>	<b>Inception to Date</b>
TRC NPV Benefits	\$0	\$0
TRC NPV Costs	\$7,462	\$7,462
TRC Net Benefits	\$(7,462)	\$(7,462)
TRC Benefit/Cost Ratio	0.00	0.00

### 3.5 Residential Retrofit Program

(Rate Class R/RT)

#### 3.5.1 Program Description

The Residential Retrofit (RR) Program is designed to overcome market barriers to energy efficiency in the existing residential sector through rebates offered either to customers undergoing a retrofit project or to their installation contractor(s). The program encourages improvements to the thermal envelope of the structure, particularly reductions in building air leakage and increases in insulation levels, as well as installation of the most efficient gas heating technologies. The program also aims to strengthen UGI South's relationship with HVAC contractors, suppliers, and other trade allies. The RR Program launched on January 1, 2018.

The RR Program incentivizes customers to have a full diagnostic Building Performance Institute, Inc. (BPI) level energy audit completed on their home. The customer charge for this audit, from the contractor, is \$150. In addition to the \$150 from the customer, the contractor receives a \$150 payment from UGI South for each audit completed.

As a result of the audit findings, all cost-effective measures are presented to the customer in the form of a report with corresponding incentive levels. After the completion of a job, the customer must have a test-out audit performed by the contractor, and a rebate will be issued for the measures that were installed. The list of efficiency measures and incentives are listed below.

<b>Improvement Type</b>	<b>Incentive to Customer</b>
Efficient Space Heating System	\$500 - \$1,800
Heating Pipe Insulation	\$5 - \$15 per ft.
Air Infiltration Reduction	\$150 - \$500
Roof/Ceiling Insulation	\$0.35 - \$2 per sq. ft.
Wall Insulation	\$0.30 - \$1.50 per sq. ft.
Duct Insulation	\$5 per ft.
Duct Sealing	\$75 - \$300
Wi-Fi Thermostat Installation	\$100
Low-Flow Fixtures	\$5 - \$30
Efficient Water Heater	\$300 - \$400
Water Heater Pipe Insulation	\$15 per ft.
Tank Temperature Turn-Down	\$5

### 3.5.2 Program Highlights

UGI South hired Performance Systems Development (PSD) as the program implementer for the RR Program. In PY2, \$286,191 was spent on administrative activities for this program. Below is a chart of participation by rebate type in the RR program:

<b>Table 35. PROGRAM PARTICIPATION</b>	
<b>Rebate Level</b>	<b>Rebate Count</b>
Home Energy Audits	151
Wi-Fi Thermostats	41
Ceiling Insulation	25
Air Sealing	12
DHW Pipe Insulation	9
Low Flow Showerhead	4
Kitchen/Bath Faucet Aerator	3
Duct Sealing	2
Wall Insulation	2
DHW Tank Temp Turn Down	2
ENERGY STAR Furnace	1
Heating Pipe Insulation - Hot Water	1
DHW Replacement – Storage	1

The RR Program spent \$393,609 in PY2, of which \$73,512 were customer incentives. The program provided first year gas savings of 751 MMBtus, 25% of plan projections. The program provided lifetime gas savings of 20,942 MMBtus, 31% of plan projections. Under the TRC Test, including DRIPE and CO<sub>2</sub>, the RR Program provided negative \$218 thousand in present value of net benefits (2015\$) with a BCR of .44. Without DRIPE or CO<sub>2</sub>, the RR Program provided negative \$249 thousand in present value of net benefits (2015\$) with a BCR of .36.

#### 3.5.2.1 Marketing Activity

Marketing for the RR Program began in December 2017 with the launch of a program website, [www.ugisavesmart.com](http://www.ugisavesmart.com), and a bill insert announcing the upcoming program. The website outlines the customer participation process, the potential rebates, benefits to customer participation, and a list of participating contractors. All UGI South marketing throughout the year was designed to drive traffic back to this site. UGI South continued to market the program through bill inserts throughout the remainder of the program year. In addition to bill inserts, the RR Program marketing strategy also focused on social media advertising, radio advertising, contractor outreach marketing, and a limited time offer promotion. UGI South focused on simple messaging that highlighted the benefits

of the program that a customer could experience. During the final quarter of the program year, UGI South began digital advertising on social media platforms. Most of the marketing focus was put toward contractor outreach. UGI South provided contractors with marketing collateral, digital HTML code to place on the contractor’s website, and yard signs to place in their customer’s yards as they were working on a project. Lastly, in an effort to get energy savings at the time of the energy audit, as well as to drive more customers to get an energy audit and allow the contractor to sell deeper saving upgrades, a limited time offer (LTO) was launched on August 1<sup>st</sup>. The LTO consisted of a free Nest E Wi-Fi Thermostat direct installed to the first 100 customers to sign up for an energy audit through a participating contractor. Also included was a \$500 bonus rebate to any customer who installed insulation and air sealing measures, as a result of their audit recommendation, by November 1<sup>st</sup>. The LTO was marketed to eligible customers via multiple email blasts, the Company’s website, and a dedicated RR Program microsite. The initial 100 audits and Nest installations were completed within the month of August. UGI South saw initial success in getting customers to install retrofit measures with the added \$500 rebate bonus. At the time of typing this report, that data was not completed and will be included in the PY3 Annual Report.

**3.5.2.2 Inspection Activity**

A total of eight field inspections were conducted in the RR Program. Four of those inspections were conducted, in the field, at the time of the energy audit. Three of the inspections were conducted as in progress measure installation field inspections. One inspection was conducted after all installation work was completed. All inspection results were passing, and work quality and customer satisfaction were high.

**3.5.2.3 Evaluation Activity**

There was no evaluation activity in PY2.

**3.5.3 Program Updates**

There are no program updates in PY3.

**3.5.4 Residential Retrofit Program Results**

<b>Table 36. PROGRAM COSTS</b>			
<b>Component (Nominal \$)</b>	<b>PY2 - Actual</b>	<b>PY2 - Projected</b>	<b>%</b>
<b>Direct Utility Costs</b>	<b>\$393,609</b>	<b>432,111</b>	<b>91%</b>
Customer Incentives	\$73,512	\$155,020	47%
Administration	\$286,191	\$196,923	145%
Marketing	\$29,719	\$75,763	39%
Inspections	\$4,187	\$4,405	95%
Evaluations	\$0	\$0	0%
<b>Incremental Participant Costs</b>	<b>\$97,426</b>	<b>\$183,483</b>	<b>53%</b>

**Table 37. PROGRAM SAVINGS**

Type	PY2 - Actual	PY2 - Projected	%
<b>Natural Gas (MMBtus)</b>			
Annual	751	3,023	25%
Lifetime	20,942	68,280	31%
<b>Electric Energy (MWh)</b>			
Annual	12.3	5.0	246%
Lifetime	327.8	120.2	273%
<b>Capacity Savings (MW)</b>	.009	.004	225%
<b>Water Savings (Million Gal)</b>			
Annual	28,855	130,508	22%
Lifetime	275,382	3,132,192	9%

**Table 38. PROGRAM COST-EFFECTIVENESS (BASE CASE + DRIPE & CO<sub>2</sub>)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$171,079	\$171,079
TRC NPV Costs	\$389,799	\$406,974
TRC Net Benefits	\$(218,720)	\$(235,895)
TRC Benefit/Cost Ratio	0.44	0.42

**Table 39. PROGRAM COST-EFFECTIVENESS (BASE CASE)**

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$140,210	\$140,210
TRC NPV Costs	\$389,799	\$406,974
TRC Net Benefits	\$(249,589)	\$(266,764)
TRC Benefit/Cost Ratio	0.36	0.34

## **3.6 Nonresidential Retrofit Program**

(Rate Classes N/NT and R/RT as part of multi-family projects)

### **3.6.1 Program Description**

The Nonresidential Retrofit (NR) Program provides incentives for overcoming market barriers for natural gas efficiency retrofits in existing commercial and multi-family buildings. The NR Program launched on January 1, 2018.

### **3.6.2 Program Highlights**

The NR Program spent \$235,800 in PY2, of which \$227,250 were customer incentives. The program provided first year gas savings of 7,183 MMBtus and lifetime gas savings of 146,655 MMBtus. Under the TRC Test, including DRIPE and CO<sub>2</sub>, the NR Program provided \$199 thousand in present value of net benefits (2015\$) with a BCR of 1.38. Without DRIPE or CO<sub>2</sub>, the NR Program provided \$60 thousand in present value of net benefits (2015\$) with a BCR of 1.12.

The NR Program provided incentives to 11 projects in PY2. The projects were completed at a school, multi-family buildings, and churches. These projects were provided cost-effective incentives to help overcome the large incremental cost between the installation of low or baseline efficiency measures and high efficiency measures. The rebates were instrumental in getting these customers to move forward with energy saving upgrades and included custom space and water heating measures, as well as, shell upgrade measures with insulation and air sealing.

#### **3.6.2.1 *Marketing Activity***

The NR Program marketing activity was limited in PY2 due to the complex nature of the projects. To ease customer understanding of the program, the Company's website was updated to include a section on the NR Program, referred to as the Commercial Energy Upgrades Program. In addition to updating the website, UGI South focused marketing on Trade Allies, in an effort to bring these projects to UGI South. Lastly, media events were held at a multi-family complex in Easton, PA, and an elementary school in Palmyra, PA to celebrate the completion of their commercial energy upgrades. The media events were accompanied by a big check presentation and press releases were submitted detailing the benefits of the projects and the role that the NR Program played in the completion and incentivizing of those projects.

#### **3.6.2.2 *Inspection Activity***

All 11 NR Program projects that were completed in PY2 were inspected by UGI South staff prior to releasing payment. Due to the complex nature of these projects, in progress inspections were also conducted on three of the four projects.

#### **3.6.2.3 *Evaluation Activity***

There was no evaluation activity in PY2.



### 3.6.3 Program Updates

There are no program updates for PY3.

### 3.6.4 Nonresidential Retrofit Program Results

Component (Nominal \$)	PY2 - Actual	PY2 - Projected	%
<b>Direct Utility Costs</b>	<b>\$235,800</b>	<b>\$204,559</b>	<b>115%</b>
Customer Incentives	\$227,250	\$37,881	600%
Administration	\$8,550	\$63,451	13%
Marketing	\$0	\$98,492	0%
Inspections	\$0	\$4,735	0%
Evaluations	\$0	\$0	0%
<b>Incremental Participant Costs</b>	<b>\$425,372</b>	<b>\$44,480</b>	<b>956%</b>

Type	PY2 - Actual	PY2 - Projected	%
<b>Natural Gas (MMBtus)</b>			
Annual	7,183	1,780	404%
Lifetime	146,655	25,660	572%
<b>Electric Energy (MWh)</b>			
Annual	7.1	5.0	143%
Lifetime	154.2	99.0	156%
<b>Capacity Savings (MW)</b>	.0003	0.000	0%
<b>Water Savings (Million Gal)</b>			
Annual	0	364,872	0%
Lifetime	0	5,903,958	0%

<b>Table 42. PROGRAM COST-EFFECTIVENESS (BASE CASE + DRIPE &amp; CO<sub>2</sub>)</b>		
<b>Benefits/Cost Component (2015\$)</b>	<b>PY2</b>	<b>Inception to Date</b>
TRC NPV Benefits	\$723,900	\$981,783
TRC NPV Costs	\$524,860	\$633,080
TRC Net Benefits	\$199,040	\$348,704
TRC Benefit/Cost Ratio	1.38	1.55

<b>Table 43. PROGRAM COST-EFFECTIVENESS (BASE CASE)</b>		
<b>Benefits/Cost Component (2015\$)</b>	<b>PY2</b>	<b>Inception to Date</b>
TRC NPV Benefits	\$585,690	\$789,478
TRC NPV Costs	\$524,860	\$633,080
TRC Net Benefits	\$60,830	\$156,398
TRC Benefit/Cost Ratio	1.12	1.25

## **3.7 Behavior and Education**

(Rate Class R/RT)

### **3.7.1 Program Description**

The objective of the Behavior and Education (BE) Program is to motivate a large group of residential customers to save energy by changing their behavior through education, outreach, and energy monitoring. The premise is that the delivery of timely, salient, and personalized information allows for informed decision-making. Small changes with noticeable results pave the way for wider program participation and increased future savings.

### **3.7.2 Program Highlights**

UGI South has delayed the launch of the BE Program. Although UGI South originally planned to launch the BE Program in FY 2019, the Company has been engaging in additional research regarding the projected benefits and cost-effectiveness of the program.

#### *3.7.2.1 Marketing Activity*

There was no marketing activity in PY2.

#### *3.7.2.2 Inspection Activity*

There was no inspection activity in PY2.

#### *3.7.2.3 Evaluation Activity*

There was no evaluation activity in PY2.

### **3.7.3 Program Updates**

UGI South has delayed the launch of the BE Program. Although UGI South originally planned to launch the BE Program in October 2018, the Company has been engaging in additional research regarding the projected benefits and cost-effectiveness of the program.

### **3.7.4 Behavior and Education Program Results**

There were no costs or savings for the BE Program in PY2.

## **3.8 Combined Heat and Power**

(Rate Classes DS, LFD)

### **3.8.1 Program Description**

The Combined Heat and Power (CHP) Program seeks to promote the installation of cost-effective and net-primary-energy-saving CHP projects and provide meaningful CO<sub>2</sub> emission reductions. A CHP plant produces electricity at a commercial or industrial site while at the same time using the waste heat from the production of the electricity to serve a thermal load. Net efficiencies come from the recovered heat that is typically wasted in grid electricity production. Efficiencies also stem from avoided transmission and distribution losses from delivering the electricity from the generator to the customer site.

### **3.8.2 Program Highlights**

The CHP Program spent \$4,510 on administrative and marketing costs in PY2, but no CHP projects were completed. Each CHP project is run through a cost-effectiveness test as part of the initial pre-screening. Upon completion of each project, the final project costs are evaluated to determine the final incentive level. Two projects have been pre-approved for PY3.

#### **3.8.2.1 *Marketing Activity***

UGI leveraged case studies from prior successful CHP installations, along with customer outreach via Relationship Managers who will educate customers on the potential benefits of CHP in PY2.

#### **3.8.2.2 *Inspection Activity***

There was no inspection activity in PY2.

#### **3.8.2.3 *Evaluation Activity***

There was no evaluation activity in PY2.

### **3.8.3 Program Updates**

There are no program updates for PY3.

### 3.8.4 Combined Heat and Power Program Results

Component (Nominal \$)	PY2 - Actual	PY2 - Projected	%
<b>Direct Utility Costs</b>	<b>\$4,510</b>	<b>\$373,500</b>	<b>1%</b>
Customer Incentives	\$0	\$250,000	0%
Administration	\$4,510	\$51,000	6%
Marketing	\$0	\$50,000	0%
Inspections	\$0	\$2,500	0%
Evaluations	\$0	\$20,000	0%
<b>Incremental Participant Costs</b>	<b>\$0</b>	<b>\$5,698,526</b>	<b>0%</b>

Type	PY2 - Actual	PY2 - Projected	%
<b>Net Primary Fuel Savings (MMBtus)</b>			
Annual	0	169,855	0%
Lifetime	0	2,547,828	0%

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$0	\$0
TRC NPV Costs	\$4,510	\$10,910
TRC Net Benefits	\$(4,510)	\$(10,910)
TRC Benefit/Cost Ratio	0.00	0.00

Benefits/Cost Component (2015\$)	PY2	Inception to Date
TRC NPV Benefits	\$0	\$0
TRC NPV Costs	\$4,510	\$10,910
TRC Net Benefits	\$(4,510)	\$(10,910)
TRC Benefit/Cost Ratio	0.00	0.00

### **3.9 Updates**

- The rebate for Commercial Fryers has been reduced to \$500 per fryer, effective April 1, 2018. This change is due to new incremental cost data that showed the original rebate levels of \$1,400 and \$1,900 for small vat and large vat fryers, respectively, was greater than the cost of the most popular ENERGY STAR Commercial Fryers.
- To overcome participation barriers in Commercial Kitchen Equipment, UGI South has implemented a midstream program process that enables participating kitchen equipment distributors to give customers instant rebates and be reimbursed on a monthly basis.
- Launch of the BE Program has been delayed. Although UGI South originally planned to launch the BE Program in October 2018, the Company has been engaging in additional research regarding the projected benefits and cost-effectiveness of the program.

**CERTIFICATE OF SERVICE**  
**Docket No. R-2015-2518438**

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

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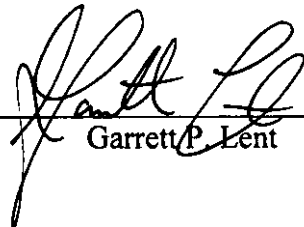
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